

OC-964 1964

MDDC - 964 ✓

UNITED STATES
ATOMIC ENERGY COMMISSION
OAK RIDGE
TENNESSEE

184" CYCLOTRON

Oscillator Capacitance Measurements

by

R. L. Anderson

Published for use within the Atomic Energy Commission. Inquiries for additional copies and any questions regarding reproduction by recipients of this document may be referred to the Documents Distribution Subsection, Publication Section, Technical Information Branch, Atomic Energy Commission, P. O. Box E, Oak Ridge, Tennessee.

Inasmuch as a declassified document may differ materially from the original classified document by reason of deletions necessary to accomplish declassification, this copy does not constitute authority for declassification of classified copies of a similar document which may bear the same title and authors.

Date of Manuscript: March 18, 1947

Document Declassified: May 23, 1947

This document consists of 1 page.



Digitized by the Internet Archive
in 2011 with funding from

University of Florida, George A. Smathers Libraries with support from LYRASIS and the Sloan Foundation

184" CYCLOTRON

Oscillator Capacitance Measurements

By R. L. Anderson

Experiment done by R. L. Anderson and J. Riedel

Introduction

Capacity of the oscillator plate to ground was requested by Mr. Pote, electrical engineer at Harvard University. It was also desirable to have this information for comparison with model measurements and for the records.

Experimental Setup:

The oscillator housing was separated from the transmission line housing, and the oscillator plate coupling loop was disconnected at its grounded end. The water lines running through the loop were disconnected at their entrance into the loop. The G-R impedance bridge leads were connected to the 9C21 tube water jacket and to the oscillator housing. For accuracy an oscilloscope was used in balancing the bridge. (Oscillator wiring diagram, Dwg. #2L2754)

Results:

The plate to ground capacity with coupling loop disconnected was $113 \mu\mu f$. The plate to ground capacity with coupling loop disconnected and two $50 \mu\mu f$ vacuum capacitors added as in normal run condition was $219 \mu\mu f$. The grid circuit contains $15 - 50 \mu\mu f$ vacuum capacitors in parallel (calculated) - $750 \mu\mu f$. The filament circuit contains $10 - 50 \mu\mu f$ vacuum capacitors in parallel (calculated) - $500 \mu\mu f$. It was not deemed necessary to measure the grid or filament circuits. The measurements were made with G-R Impedance Bridge, Type 650-A Serial #1977, and are $\pm 2 \mu\mu f$. Lead capacity of $29 \mu\mu f$ has already been deducted.

UNIVERSITY OF FLORIDA



3 1262 08909 7249